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10/679,154	10/03/2003	Steven J. Simske	100202598-1	3961

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FORT COLLINS, CO 80527-2400

EXAMINER
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BLACKWELL, JAMES H

ART UNIT	PAPER NUMBER
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2176

NOTIFICATION DATE	DELIVERY MODE
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04/30/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/679,154	<b>Applicant(s)</b> SIMSKE ET AL.	
	<b>Examiner</b> James H. Blackwell	<b>Art Unit</b> 2176	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 and 50-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-21, 48 and 50-65 is/are allowed.
- 6) ☒ Claim(s) 22-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is in response to an amendment filed 01/18/2008.

Claims 1-48, and 50-65 are currently pending.

Claims 1, 22, and 48 are independent claims.

### ***Allowable Subject Matter***

Claims 1-21, 48, and 50-65 are allowed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu et al. (hereinafter Yanikoglu, "Pink Panther: A Complete Environment For Ground-Truthing and Benchmarking Document Page Segmentation", in Pattern Recognition, Vol. 31, No. 9, pp. 1191-1204, (c) 1998) in view of Rom (U.S. Patent No. 7,054,509 filed 03/13/2001, issued 05/30/2006).

**In regard to independent Claim 22, Yanikoglu discloses:**

- *determining a definition of at least one region within the image, the region definition having a location specification of the at least one region and a type*

*specification of the at least one region* (Pg. 1194, Sec. 3.2 → allows a user to view a document image and draw zones of various types around the different page regions, using simple mouse clicks, thereby *defining regions in the image*; after drawing the zone, a user can label it with its type, subtype, parent zone, attached zones, and any number of attributes; Fig. 1 discloses position and type specifications associated with the zones and the image as a whole in the output RDIFF file).

- *generating an image layout definition based on the region definition* (Pg. 1195, Sec. 3.2 → image layout definition is created in RDIFF format based on the indicated zones).

Yanikoglu fails to disclose:

- *searching for an image layout definition template that best matches the generated image layout definition, the image layout definition template including at least one defined template region specifying at least one of a location, a type, and a modality for the defined template region; and*
- *conforming the generated image layout definition to the best-matched image layout definition template, including adjusting at least one of the location specification, the type specification, and a modality specification of the at least one region of the image to a corresponding one of the location, the type, and the modality of the defined template region of the best-matched image layout definition template.*

However, Rom discloses *searching for an image layout definition template that best matches the generated image layout definition, the image layout definition template including at least one defined template region specifying at least one of a location, a type, and a modality for the defined template region; and conforming the generated image layout definition to the best-matched image layout definition template, including adjusting at least one of the location specification, the type specification, and a modality specification of the at least one region of the image to a corresponding one of the location, the type, and the modality of the defined template region of the best-matched image layout definition template* (at least Col. 4, lines 15-67 → a scanner is used to scan an input form thereby creating a scanned image. A forms processing system then analyzes the scanned form and establishes a “model” of the form based on the distribution or layout of form fields (i.e., a *layout definition*). This “model” of the scanned form is then compared to stored templates of a plurality of forms to identify a form template “*best fitting*” that of the scanned form “model”. Once the form has been identified, interpretation of the fields specific to a particular form and further processing of the data can resume (i.e., conforming the scanned input field data to the identified template)).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu and Rom since both inventions are related to the analysis of digitized (scanned) content forming images. Adding the disclosure of Rom provides the benefit of locating candidate templates that either

match or are close to the image in question by comparing a layout extracted from the input image to the layout of a set of templates to find a match or near match.

**In regard to dependent Claim 23, Yanikoglu discloses:**

- *displaying the image on a display* (see Pg. 1196, Fig. 3 → screen snapshot of GroundsKeeper with image with drawn zones. Each zone is given a unique identifying number, displayed on the screen).

**In regard to dependent Claim 24, Yanikoglu discloses:**

- *displaying the boundaries of the at least one defined region according to its type specification* (Pg. 1194-1195, Sec. 3.2 → after drawing a zone, one can label it with its type, subtype, parent zone, attached zones, and any number of attributes. Also see screen snapshot in Pg. 1196, Fig. 3).

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Revankar et al. (hereinafter Revankar, U.S. Patent No. 5,767,978 filed 01/21/1997, issued 06/16/1998).

**In regard to dependent Claim 25, Yanikoglu and Rom fail to disclose:**

- *determining a definition of at least one region in the image comprises a modality specification.*

However, Revankar discloses *determining a definition of at least one region in an image comprises a modality specification* (Abstract → image segmentation according to classes of regions that may be rendered according to the same imaging techniques. Image regions may be rendered according to a three-class system (such as traditional text, graphic and picture systems), or according to more than three image classes. In addition, only two image classes may be required to render high quality draft or final output images. The image characteristics that may be rendered differently from class to class may include half toning, colorization and other image attributes (i.e., *modalities*)).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Revankar as all three inventions relate to image analysis. Adding the disclosure of Revankar provides the benefit of recognizing region types by class and by modality (color, bit depth, etc.).

It is noted that Yanikoglu may disclose this limitation (Pg. 1196, Fig. 3 → suggests that zones are characterized by modality (Box at bottom of screen dump shows Zone6 with adjacent label as Halftone). Also, Yanikoglu discusses the prior

art (Pg. 1191) and suggests that also describing a modality for a zone was performed. However, there does not appear to be enough of a description of GroundsKeeper in Yanikoglu to determine this.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Hall Jr. et al. (hereinafter Hall, U.S. Patent No. 6,768,816 filed 06/13/2002, issued 07/27/2004), and in further view of Sakai et al. (hereinafter Sakai, U.S. Patent No. 6,735,740 filed 03/04/1998, issued 05/11/2004).

**In regard to dependent Claim 26, Yanikoglu, and Rom fail to disclose:**

- *wherein determining a definition of at least one region in the image comprises
  - *automatically determining the definition of the at least one region in the image by segmentation and classification analyses of the image.**

However, Hall discloses *automatically determining the definition of the at least one region in the image by segmentation analysis of the image* (see Fig. 4 → represents a display of a document for which automatic segmentation has been performed).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Hall as all three inventions are related to image segmentation and layout analysis. Adding the disclosure of Hall provides the benefit of an initial guess as to how the image should be segmented.



Yanikoglu, Rom, and Hall fail to disclose:

- *automatically determining the definition of the at least one region in the image by classification analysis of the image*

However, Sakai discloses *automatically determining the definition of the at least one region in the image by classification analysis of the image* (Figs. 10A-C → depict progressive classification of image regions based on type).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Hall, and Sakai as all of these inventions relate to document image analysis. Adding the disclosure of Sakai provides the benefit of partitioning an image based on types of content identified in the image

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Ohta (U.S. Patent No. 6,163,623 filed 07/26/1995, issued 12/19/2000).

**In regard to dependent Claim 27, Yanikoglu and Rom fail to disclose:**

- *determining a definition of at least one region in the image comprises:*
  - *receiving a user input indicative of a point on the image; and*
  - *defining a region encompassing the point using segmentation and classification analyses of the image.*

However, Ohta discloses *receiving a user input indicative of a point on the image; and defining a region encompassing the point using segmentation and*

*classification analyses of the image* (Col. 7, line 46 through Col. 8, line 2 → scanning a documents, rendering it to a touch display, and allowing the user to manually select a region or regions to further process; the drawing of a box is done automatically based on the user input).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Ohta as all three inventions relate to document analysis. Adding the disclosure of Ohta provides the user with a means to easily designate zones without the need to manually draw on the screen.

Claims 28, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Rangarajan (U.S. Patent No. 5,822,454 filed 04/10/1995, issued 10/13/1998).

**In regard to dependent Claim 28, Yanikoglu and Rom fail to disclose:**

- *determining a definition of at least one region in the image comprises:*
  - *receiving a user input indicative of boundaries of the region on the image;*  
*and*
  - *receiving a user input indicative of region type and region modality specifications.*

However, Rangarajan discloses *receiving a user input indicative of boundaries of the region on the image; and receiving a user input indicative of region type and region modality specifications* (Col. 9, lines 15-27; Figs. 7A-B →

a conventional set of drawing-like tools with which the user can graphically create the user defined zones. This is done by choosing an appropriate drawing tool, such as a rectangle or polygon creation tool, and applying it to the de-skewed image to select the individual areas or zones containing the desired text information. Fig. 7a illustrates one example of a suitable user interface 705, showing a de-skewed document 700. Fig. 7b illustrates the same document now including a number of user-defined zones 701. A palette of drawing tools 703 is also shown, with various graphical tools for selecting the user-defined zones 701. Once the user defines a number of zones, the coordinates of the boundary of each of user defined zone is stored, preferably using the coordinates of an upper left hand corner, and a lower right hand corner where the user defined zone is a rectangle. For general polygonal user defined zones, the coordinates of each vertex may also be stored).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Rangarajan as all three inventions relate to document image analysis. Adding the disclosure of Rangarajan provides the benefit of manually defining image zones.

**In regard to dependent Claim 36, Yanikoglu and Rom fail to disclose:**

- *determining definition of at least one region comprises*
  - *receiving a user specification of a location and boundaries of a region in the image.*

However, Rangarajan discloses *receiving a user specification of a location and boundaries of a region in the image* (Col. 9, lines 15-37 → inputting polygons) input of vertices to define an image region).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Rangarajan as all three inventions relate to document image analysis. Adding the disclosure of Rangarajan provides the benefit of manually defining image regions.

Claims 29-31, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Rangarajan, and in further view of Revankar et al. (hereinafter Revankar, U.S. Patent No. 5,767,978 filed 01/21/1997, issued 06/16/1998).

**In regard to dependent Claim 29, Yanikoglu and Rom fail to disclose:**

- *determining a definition of at least one region in the image comprises:*
  - *receiving a user input indicative of vertices of the region on the image.*

However, Rangarajan discloses *receiving a user input indicative of vertices of the region on the image* (Col. 9, lines 15-37 → input of vertices to define an image region).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Rangarajan as all three inventions relate to document image analysis. Adding the disclosure of Rangarajan provides the benefit of manually defining image regions.

Yanikoglu, Rom, and Rangarajan fail to expressly disclose:

- *receiving a user input indicative of region type and region modality specifications.*

However, Revankar discloses *receiving a user input indicative of region type and region modality specifications* (Abstract → image segmentation according to classes of regions that may be rendered according to the same imaging techniques. Image regions may be rendered according to a three-class system (such as traditional text, graphic and picture systems), or according to more than three image classes. In addition, only two image classes may be required to render high quality draft or final output images. The image characteristics that may be rendered differently from class to class may include half toning, colorization and other image attributes).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, and Revankar as all of these inventions relate to image analysis. Adding the disclosure of Revankar provides the benefit of recognizing region types by class and by modality (color, bit depth, etc.).

**In regard to dependent Claim 30, Yanikoglu and Rom fail to disclose:**

- *a definition of at least one region in the image comprises:*
  - *receiving a user input indicative of vertices of a polygonal region on the image.*

However, Rangarajan discloses *receiving a user input indicative of vertices of a polygonal region on the image* (Col. 9, lines 15-37 → input of vertices to define an image region).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Rangarajan as all three inventions relate to document image analysis. Adding the disclosure of Rangarajan provides the benefit of manually defining image regions.

Yanikoglu, Rom, and Rangarajan fail to disclose:

- *receiving a user input indicative of region type and region modality specifications of the polygonal region.*

However, Revankar discloses *receiving a user input indicative of region type and region modality specifications of the polygonal region* (Abstract → image segmentation according to classes of regions that may be rendered according to the same imaging techniques. Image regions may be rendered according to a three-class system (such as traditional text, graphic and picture systems), or according to more than three image classes. In addition, only two image classes may be required to render high quality draft or final output images. The image characteristics that may be rendered differently

from class to class may include half toning, colorization and other image attributes).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosure of Yanikoglu, Rom, Rangarajan, and Revankar as all of these inventions relate to image analysis. Adding the disclosure of Revankar provides the benefit of recognizing region types by class and by modality (color, bit depth, etc.).

**In regard to dependent Claim 31, Yanikoglu and Rom fail to disclose:**

- *determining a definition of at least one region in the image comprises:*
  - *receiving a user input indicative of a first vertex and a location of a second vertex opposite the first vertex of a rectangular region on the image; and*
  - *receiving a user input indicative of region type and region modality specifications of the rectangular region.*

However, Rangarajan discloses *receiving a user input indicative of a first vertex and a location of a second vertex opposite the first vertex of a rectangular region on the image* (Col. 9, lines 15-37 → input of vertices to define an image region).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Rangarajan as all three inventions relate to document image analysis. Adding the disclosure of Rangarajan provides the benefit of manually defining image regions.

Yanikoglu, Rom, and Rangarajan fail to disclose:

- *receiving a user input indicative of region type and region modality specifications of the rectangular region.*

However, Revankar discloses *receiving a user input indicative of region type and region modality specifications of the rectangular region* (Abstract → image segmentation according to classes of regions that may be rendered according to the same imaging techniques. Image regions may be rendered according to a three-class system (such as traditional text, graphic and picture systems), or according to more than three image classes. In addition, only two image classes may be required to render high quality draft or final output images. The image characteristics that may be rendered differently from class to class may include half toning, colorization and other image attributes).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, and Revankar as all of these inventions relate to image segmentation. Adding the disclosure of Revankar provides the benefit of recognizing region types by class and by modality (color, bit depth, etc.).

**In regard to dependent Claim 38,** Yanikoglu, Rom, and Rangarajan fail to disclose:

- *determining definition of at least one region comprises receiving user specification of region type and region modality.*



However, Revankar discloses *receiving user specification of region type and region modality* (Abstract → image segmentation according to classes of regions that may be rendered according to the same imaging techniques. Image regions may be rendered according to a three-class system (such as traditional text, graphic and picture systems), or according to more than three image classes. In addition, only two image classes may be required to render high quality draft or final output images. The image characteristics that may be rendered differently from class to class may include half toning, colorization and other image attributes).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, and Revankar as all of these inventions relate to image analysis. Adding the disclosure of Revankar provides the benefit of recognizing region types by class and by modality (color, bit depth, etc.).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Huang et al. (hereinafter Huang, U.S. Patent Application Publication No. 2003/0053183 A1 filed 09/20/2001, published 03/20/2003), and in further view of Revankar.

**In regard to dependent Claim 32, Yanikoglu, Rom, and Huang fail to disclose:**

- *determining a definition of a visible area in the image comprises*
  - *receiving a user input indicative of a first vertex and a location of a second vertex opposite the first vertex of the visible area on the image.*

However, Revankar discloses *receiving a user input indicative of a first vertex and a location of a second vertex opposite the first vertex of the visible area on the image* (Abstract → image segmentation according to classes of regions that may be rendered according to the same imaging techniques. Image regions may be rendered according to a three-class system (such as traditional text, graphic and picture systems), or according to more than three image classes. In addition, only two image classes may be required to render high quality draft or final output images. The image characteristics that may be rendered differently from class to class may include half toning, colorization and other image attributes).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Huang and Revankar as all of these inventions relate to image analysis including

segmentation. Adding the disclosure of Revankar provides the benefit of recognizing region types by class and by modality (color, bit depth, etc.).

Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Fredlund et al. (hereinafter Fredlund, U.S. Patent Application Publication No. 2003/0058457 filed 09/21/2001, published 03/27/2003).

**In regard to dependent Claim 33, Yanikoglu and Rom fail to explicitly disclose:**

- *displaying the image on a display comprises:*
  - *receiving a user specification of a file size of the image;*
  - *determining a bit depth of the image;*
  - *determining dimensions of the image;*
  - *determining a display resolution in response to the file size, bit depth, and image dimensions; and*
  - *displaying the image on a display according to the display resolution.*

However, Fredlund discloses *displaying the image on a display comprises: receiving a user specification of a file size of the image; determining a bit depth of the image; determining dimensions of the image; determining a display resolution in response to the file size, bit depth, and image dimensions; and displaying the image on a display according to the determined display resolution* (Pg. 2, Paragraphs [0025, 0029], Pg. 4, Paragraphs [0042-0044] → a system wherein a user determines (specifies)

the file size of an image required to produce a high quality image reproduction on a selected image-bearing product. The user indirectly does this by selecting a desired image-bearing product. The system then instructs the user's system to prepare the original image so that it is optimal for the chosen image-bearing product (i.e., it provides file size requirements). Based on this information, the image is adjusted in size and in bit depth to produce an optimal image in terms of size and resolution. The user's system then *transmits* that converted image to the server to create the chosen image-bearing product. The image-bearing products are typically hardcopy prints. The final product preview is displayed to the user (see [0042])).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Fredlund as all three inventions are related to the manipulation of digital images. Adding the disclosure of Fredlund provides the benefit of optimizing an image according to user-provided inputs based on a display requirement.

**In regard to dependent Claim 34, Yanikoglu and Rom fail to explicitly disclose:**

- *receiving a user specification of a file size of the image;*
- *determining a bit depth of the image;*
- *determining dimensions of the image;*
- *determining a display resolution in response to the file size, bit depth, and image dimensions; and*
- *transmitting the image having a resolution according to the determined display resolution.*

However, Fredlund discloses *receiving a user specification of a file size of the image; determining a bit depth of the image; determining dimensions of the image; determining a display resolution in response to the file size, bit depth, and image dimensions; and transmitting the image having a resolution according to the determined display resolution* (Pg. 2, Paragraphs [0025, 0029], Pg. 4, Paragraphs [0042-0044] → a system wherein a user determines (specifies) the file size of an image required to produce a high quality image reproduction on a selected image-bearing product. The user indirectly does this by selecting a desired image-bearing product. The system then instructs the user's system to prepare the original image so that it is optimal for the chosen image-bearing product (i.e., it provides file size requirements). Based on this information, the image is adjusted in size and in bit depth to produce an optimal image in terms of size and resolution. The user's system then *transmits* that converted image to the server to create the chosen

image-bearing product. The image-bearing products are typically hardcopy prints.

The final product preview is displayed to the user (see [0042])).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Fredlund as all three inventions are related to the manipulation of digital images. Adding the disclosure of Fredlund provides the benefit of optimizing an image according to user-provided inputs based on a display requirement.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Candy Wong et al. (hereinafter Candy Wong, U.S. Patent Application Publication No. 2003/0067489 filed 10/15/2002, published 04/10/2003).

**In regard to dependent Claim 35, Yanikoglu and Rom fail to explicitly disclose:**

- *displaying the image on a display comprises:*
  - *determining a display resolution setting of a display screen;*
  - *determining amount of display screen space available to display the image;*
  - *determining dimensions of the image;*
  - *determining a resolution for simultaneously displaying the entire image on the display screen in response to the display resolution setting, the amount of display screen space available, and the dimensions of the image; and*

- *displaying the image on the display screen in response to the determined resolution.*

However, Candy Wong discloses *determining a display resolution setting of a display screen; determining amount of display screen space available to display the image; determining dimensions of the image; determining a resolution for simultaneously displaying the entire image on the display screen in response to the display resolution setting, the amount of display screen space available, and the dimensions of the image; and displaying the image on the display screen in response to the determined resolution*

(Abstract, Pg. 3, Paragraph [0041] → discloses a scaleable GUI system that adjusts itself (GUI components and presumably content acted upon by the GUI such as an image) to fit within a given display screen (size, resolution, etc.) according to the settings/capabilities of the display.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Candy Wong as all three inventions are related to the manipulation of digital content. Adding the disclosure of Candy Wong provides the benefit of an adjustable user interface that adjusts itself (dimensionally, bit depth; resolution), and content manipulated therein based on a given screen or display's settings/capabilities.

Claims 37, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Rangarajan, and in further view of Mahoney et al. (hereinafter Mahoney, U.S. Patent No. 5,999,664 filed 11/14/1997, issued 12/07/1999).

**In regard to dependent Claim 37, Yanikoglu, Rom and Rangarajan fail to disclose:**

- *definition of at least one region comprises verifying the user-specified region location and boundaries conform to at least one region management model.*

However, Mahoney discloses *verifying the user-specified region location and boundaries conform to at least one region management model* (Col. 20, lines 45-63 → searching and identifying documents based on their makeup (structure, content, etc.). Their system performs structural analysis at two levels. At the lower level, specific layout formats of a document can be identified (e.g., the recipient field of a letter or the header field of a memo). Such identification is performed herein using features. At the higher level, the entire configuration of an input document is captured using genre models. For example, a "business letter" is a genre model of a document that can be defined in most instances by a letter-date feature, a letter-recipient feature, a letter-cc feature, and a letter-signature feature (as shown in Fig. 3). Although some models may have some features in common, such models may still be distinguishable from each other by either the presence or absence of other features. For example, a memo and a letter may have similar letter-signature features while each may have different document header features (e.g., four-memo mark and letter-recipient)).



It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, and Mahoney as all of these inventions relate to comparing document images to models or templates of documents. Adding the disclosure of Mahoney provides the benefit of identifying documents (or regions thereof) with layout models.

**In regard to dependent Claim 41, Yanikoglu, Rom and Rangarajan fail to disclose:**

- *verifying the user-specified region location and boundaries conform to at least one region management model comprises*
  - *determining whether the user-specified region boundaries fall within the visible area.*

However, Mahoney discloses *determining whether the user-specified region boundaries fall within the visible area* (Col. 20, lines 45-62 → searching and identifying documents based on their makeup (structure, content, etc.). Their system performs structural analysis at two levels. At the lower level, specific layout formats of a document can be identified (e.g., the recipient field of a letter or the header field of a memo). Such identification is performed herein using features. At the higher level, the entire configuration of an input document is captured using genre models. For example, a "business letter" is a genre model of a document that can be defined in most instances by a letter-date feature, a letter-recipient feature, a letter-cc feature, and a letter-signature feature (as shown in Fig. 3). Although some models may have some features in common,

such models may still be distinguishable from each other by either the presence or absence of other features. For example, a memo and a letter may have similar letter-signature features while each may have different document header features (e.g., four-memo mark and letter-recipient)).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, and Mahoney as all of these inventions relate to comparing document images to models or templates of documents. Adding the disclosure of Mahoney provides the benefit of identifying documents (or regions thereof) with layout models.

Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Rangarajan, and in further view of Mahoney, and in further view of Taylor et al. (hereinafter Taylor, U.S. Patent No. 5,848,184 filed 06/30/1995, issued 12/08/1998).

**In regard to dependent Claim 39, Yanikoglu, Rom, Rangarajan, and Mahoney fail to disclose:**

- *verifying the user-specified region location and boundaries conform to at least one region management model comprises
  - *determining whether the user-specified region boundaries overlap with another region.**

However, Taylor discloses *determining whether the user-specified region boundaries overlap (or cross) with another region* (Col. 7, lines 36-63 →

detection of overlapping boundaries as well as bounding boxes, which cross one another).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, Mahoney, and Taylor as all of these inventions relate to the analysis of document images. Adding the disclosure of Taylor provides the benefit of detecting overlapping/crossing boundary boxes.

**In regard to dependent Claim 40, Yanikoglu, Rom, Rangarajan, and Mahoney fail to disclose:**

- *verifying the user-specified region location and boundaries conform to at least one region management model comprises*
  - *determining whether the user-specified region boundaries cross one another.*

However, Taylor discloses *determining whether the user-specified region boundaries cross one another* (Col. 7, lines 36-63 → detection of overlapping boundaries as well as bounding boxes, which cross one another).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, Mahoney, and Taylor as all of these inventions relate to the analysis of document images. Adding the disclosure of Taylor provides the benefit of detecting overlapping/crossing boundary boxes.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Rangarajan, and in further view of Mahoney, and in further view of Ahlstrom et al. (hereinafter Ahlstrom, U.S. Patent No. 6,594,030 filed 08/27/1999, issued 07/15/2003).

**In regard to dependent Claim 42, Yanikoglu, Rom, Rangarajan, and Mahoney fail to disclose:**

- *verifying the user-specified region location and boundaries conform to at least one region management model comprises determining whether the user-specified region comply with a predetermined multiple z-order specification.*

However, Ahlstrom discloses *determining whether the user-specified region comply with a predetermined multiple z-order specification* (Col. 6, lines 23-56 → z-order as it relates to how pages are overlapped upon one another).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Rangarajan, Mahoney, and Ahlstrom as all of these inventions relate to analysis of page objects. Adding the disclosure of Ahlstrom provides the benefit of checking z-ordering of pages.

Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Mahoney.

**In regard to dependent Claim 43,** Yanikoglu and Rom fail to expressly disclose:

- *wherein conforming the generated image layout definition to the best-matched image layout template comprises:*
  - *adjusting the location specification of the at least one region of the image layout definition.*

However Mahoney discloses *adjusting the location specification of the at least one region of the image layout definition* (Abstract → a document search system provides a user with a programming interface for dynamically specifying features of documents recorded in a corpus of documents). Mahoney provides a user interface which allows for the definition or adjustment of a given documents' parameters in order to search a corpus of documents looking for similarities.

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to use the user interface of Mahoney to make adjustments in the model of a current document to make identification of all or a part of similar documents more likely.

It also would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Mahoney as all three inventions relate to comparing document images to models or templates of documents. Adding the disclosure of Mahoney provides the benefit of identifying documents (or regions thereof) with layout models.

**In regard to dependent Claim 44, Yanikoglu and Rom fail to expressly disclose:**

- *wherein conforming the generated image layout definition to the best-matched image layout template comprises:*
  - *adjusting the type specification of the at least one region of the image layout definition.*

However Mahoney discloses *adjusting the type specification of the at least one region of the image layout definition* (Abstract → a document search system provides a user with a programming interface for dynamically specifying features of documents recorded in a corpus of documents). Mahoney provides a user interface which allows for the definition or adjustment of a given documents' parameters in order to define or refine a search of a corpus of documents looking for similarities.

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to use the user interface of Mahoney to make adjustments in the model of a current document to make identification of all or a part of similar documents more likely.

It also would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Mahoney as all three inventions relate to comparing document images to models or templates of documents. Adding the disclosure of Mahoney provides the benefit of identifying documents (or regions thereof) with layout models.

**In regard to dependent Claim 45, Yanikoglu and Rom fail to expressly disclose:**

- *conforming the generated image layout definition to the best-matched image layout definition template comprises*
  - *adjusting the modality specification of the at least one region of the image layout definition.*

However Mahoney discloses *adjusting the modality specification of the at least one region of the image layout definition* (Abstract → a document search system provides a user with a programming interface for dynamically specifying features of documents recorded in a corpus of documents). Mahoney provides a user interface which allows for the definition or adjustment of a given documents' parameters in order to define or refine a search of a corpus of documents looking for similarities.

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to use the user interface of Mahoney to make adjustments in the model of a current document to make identification of all or a part of similar documents more likely.

It also would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Mahoney as all three inventions relate to comparing document images to models or templates of documents. Adding the disclosure of Mahoney provides the benefit of identifying documents (or regions thereof) with layout models.

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Huang.

**In regard to dependent Claim 46, Yanikoglu discloses:**

- *generating an image layout definition comprising the region definition and the visible area definition* (Pg. 1195, Sec. 3.2 → image layout definition is created in RDIFF format).

Yanikoglu and Rom fail to disclose:

- *receiving a definition of a visible area in the image, the visible area definition having a specification of margins around the image*

However, Huang discloses *receiving a definition of a visible area in the image, the visible area definition having a specification of margins around the image* (at least Pg. 1, Paragraph [0017] → allows the user to define a region or regions on a preview image produced by a scanner. This region or regions are then subsequently scanned to produce a final image or images). It is further noted that such a feature was well known to those of ordinary skill in the art at the time of invention since practically every scanning software contains in its user interface a means to choose a scanning area.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, and Huang since all three inventions are related to the scanning or digitizing of documents. Adding the disclosure of Huang provides the benefit of saving time since one need not always scan the entire page to capture only certain portions.



Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanikoglu in view of Rom, and in further view of Huang, and in further view of Mahoney.

**In regard to dependent Claim 47, Yanikoglu fails to expressly disclose:**

- *conforming the generated image layout definition to the best-matched image layout definition template comprises*
  - *adjusting the visible area definition of the image layout definition.*

However Mahoney discloses *adjusting the visible area definition of the image layout definition* (Abstract → a document search system provides a user with a programming interface for dynamically specifying features of documents recorded in a corpus of documents). Mahoney provides a user interface which allows for the definition or adjustment (“tweaking”) of a given documents' parameters in order to refine the search of a corpus of documents looking for similarities.

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to use the user interface of Mahoney to make adjustments in the model of a current document to make identification of all or a part of similar documents more likely.

It also would have been obvious to one of ordinary skill in the art at the time of invention to combine the disclosures of Yanikoglu, Rom, Huang and Mahoney as all three inventions relate to comparing document images to models or templates of documents. Adding the disclosure of Mahoney provides the benefit of identifying documents (or regions thereof) with layout models.

***Response to Arguments***

Applicant's arguments with respect to Claim 22 were addressed in the previous Office Action mailed 10/18/2007 (see Pages 58-59).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Blackwell whose telephone number is (571)272-4089. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on 571-272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James H. Blackwell  
04/26/2008

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